

REMARKS

Claims 1-5, 16, 21 and 22 are pending in this application. Applicant submits the following amendments and remarks to address each of the Examiner's rejections. Applicant believes that these amendments place the application in a condition for allowance and respectfully requests the Examiner to withdraw the rejections and allow the pending claims.

Claim objection

The Examiner objected to claim 22 because the limitation "the p-type and n-type transistor" has insufficient antecedent basis. Claim 22 has been amended to "wherein each control circuit comprises an output terminal coupled to a gate a p-type and an n-type transistor associated with each SCR" to address this objection. Accordingly, Applicants request that the Examiner withdraw this objection.

35 U.S.C. § 103(a) Rejection based on Chen in view of Su

The Examiner rejected claims 1-5 under 35 U.S.C. § 103(a) as allegedly being obvious over Chen (U.S. Patent Publication No. 2001/0007521) in view of Su (U.S. Patent 6,590,261).

Independent claim 1 recites "the control circuit to change a first holding voltage of the SCR to a second holding voltage to keep the SCR in latch-up in response to detecting an ESD event, and to change the second holding voltage of the SCR to the first holding voltage after a time period to keep the SCR from latching-up, wherein the control circuit is coupled only to the SCR at the second doped region." The Examiner acknowledges that these limitations of claim 1 are missing from Chen.

The Examiner relied on Figure 4 of Su to cure the deficiencies in Chen. The cited section in Su (4:25-58), however, fails to teach or suggest what is missing from Chen, specifically, "a control circuit coupled only to the SCR at the second doped region" as recited in claim 1. Su discloses a control circuit 222 electrically connected to the gate of the MOS transistor 220 rather than the claimed "second doped region" (see Figures 4 and 5, 4:34-36). Moreover, the control circuit 222 in Su is also electrically connected to the pad 204 (see Figures 4 and 5, 4:27-29). Accordingly, Su discloses a control circuit coupled to a gate of the MOS transistor as well as a

pad. This does not meet the limitation of “a control circuit coupled only to the SCR at the second doped region” as claimed.

Therefore, claim 1 is patentable over Chen in view of Su for at least the above reasons. Because claims 2-5 are dependent on claim 1, claims 2-5 are patentable over Chen in view of Su for at least the same reasons as claim 1.

35 U.S.C. § 103(a) Rejection based on Lee in view of Lai and Tong

The Examiner rejected claims 16, 21 and 22 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lee (U.S. Patent 6,309,940) in view of Lai (U.S. Patent Publication No. 2002/0089017) and Tong (U.S. Patent 6,756,834).

Claim 16 recites “a plurality of silicon-controlled rectifiers (SCR) ... wherein for each of the SCRs, a gate of the transistor is coupled to the contact pad or ground.” The Examiner acknowledges that Lee does not teach or suggest a control circuit required by claim 16.

Though Lai discloses a control circuit, Lai fails to teach or suggest the limitation of “a gate of the transistor is coupled to the contact pad or ground,” as claimed. Lai teaches an SCR where the gate of the transistor is connected to the control circuit (see Figures 5B and 6B) rather than coupled to the contact pad or ground as required in claim 16. Accordingly, neither Lee nor Lai teach or suggest a system where “a gate of the transistor is coupled to the contact pad or ground” as recited in claim 16.

Adding the teachings of Tong to Lee and Lai fails to cure the deficiencies of Lee and Lai with respect to the limitation of “a gate of the transistor is coupled to the contact pad or ground,” as claimed. Like Lai, the gate 60/51 of the MOS transistor is connected to the RC circuit (see Figure 2) rather than “coupled to the contact pad or ground” as required by claim 16.

Therefore, claim 16 is patentable over Lee in view of Lai and further in view of Tong for at least the above reasons. Because claims 21 and 22 are dependent on claim 16, claims 21 and 22 are patentable over Lee in view of Lai and Tong for at least the same reasons as claim 16.

Conclusion

In view of the foregoing remarks, Applicant requests the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

If the Examiner does not believe the application is in condition for allowance, the Examiner is invited to contact Larry J. Johnson at (650) 838-2030 to discuss this application in further detail.

Respectfully submitted,



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